



Ecosystem Functioning and Biodiversity in the Deep Sea: The ESF EuroDEEP Programme

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The discoveries of new types of ecosystems on mid-ocean ridges and continental margins have changed our vision of biodiversity in the deep-ocean and its links with the global biosphere. The energy supply to these communities rely on methane- and sulfide-oxidizing microaerobes which are unique in their ability to satisfy their carbon and nitrogen needs from inorganic sources, under free-living forms or symbiotic association with invertebrates. Geologically-driven sources of such reduced compounds to the deep-seafloor (hydrothermal vents, methane seeps) are mostly ephemeral and discretely distributed, such are massive organic inputs (whale carcasses, sunken woods) that harbour species closely related to vent and seeps endemic taxa. These fragmented reducing habitats, however, markedly differ in their chemical/biogeochemical features and temporal dynamics.

The aim of the multi-disciplinary EuroDEEP Programme is to further explore and identify the deep-sea environment, to further describe the biological species and communities that inhabit it, and to better understand the physical and geochemical processes that shape the environment in which these communities live. The final Programme goal is to describe, explain and predict variations of biodiversity within and between deep-sea habitats, their consequences for deep-sea ecosystem functioning and the interactions of the deep sea with the global biosphere.